

strain curves obtained by the above procedures for three similar specimens of hot rolled mild steel. Two of the test bars were subjected to longitudinal tensile impact at an impact velocity of 57 ft/sec. Neither bar exhibited any plastic strain for the largest strains recorded or showed any discontinuity in the dynamic curve in the vicinity of the sharply defined static yield point. It is also significant that the maximum stresses generated did not cause failure in in either bar even though these stresses exceeded the static tensile strength.

Obviously, rates of straining of the order of 150 per second applied in the longitudinal impact test have a pronounced effect on the stress-strain curve for mild steel. The shape of the stress strain curve of mild steel beyond the elastic range would be of great interest in view of the importance of this material. It would require not only further tests with impacts of various rise

times but also a generalization of the tangent modulus procedure to make it applicable to the determination of the family of stress-strain curves for various strain rates. Such work is being planned in the Engineering Mechanics Section of the National Bureau of Standards.

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PALEONTOLOGY.—*A new prionodont pelecypod genus*. DAVID NICOL, U. S. National Museum.

In 1944 Olsson (pp. 50-51) described a new species of pelecypod which he named *Cardium* (?) *abnormalis*. The description was based on one left valve from the Upper Cretaceous of the Paita region, Peru. The hinge was not exposed, and the specimen also lacked other diagnostic morphologic characters. Recently Dr. Olsson received two more left valves from Colombia which he gave me to describe. One specimen had a part of the hinge teeth and ligament exposed. Both of these parts of the shell resemble *Glycymeris*, but some other morphologic characters are unusual. After careful preparation and examination, I believe that the specimens represent an undescribed genus.

Pettersia Nicol, n. gen.

Type species.—*Cardium* (?) *abnormalis* Olsson.

Remarks.—This genus is named for Dr. V. Petters, micropaleontologist for the International Petroleum (Colombia) Ltd., who released two additional left valves for study.

Pettersia abnormalis (Olsson), 1944

Figs. 1-5

Cardium (?) *abnormalis* Olsson, Bull. Amer. Pal. **28** (111): 50-51, pl. 17, fig. 3. 1944.

Description.—Part of Olsson's original description is as follows:

The shell is of medium size with a *Fragum*-like form and a thick, solid texture; umbo high, wide, ending above in a small prosogyrate beak; umbonal ridge high, angled, the dorsal-posterior area well defined and divided by a groove in the middle, the outer portion being flattened while the inner or side next the hinge is arched or vaulted; a deep furrow or groove extends from the ventral margin upwards towards the beak but is only faintly indicated on the umbo; surface is smooth except for irregularly distributed growth lines which at intervals are grouped together in resting marks; ventral margin crenulated; hinge unknown.

With the two additional left valves given me by Olsson, I can add the following information to the description: The duplivincular ligament consists of five symmetrical chevron-shaped grooves as in *Glycymeris*. The hinge teeth, 34 in number, are symmetrically arranged in an arc on a moderately heavy hinge plate, the side teeth being longer than the central teeth; these teeth are typically like those of a prionodont pelecypod (*Glycymeris*, *Trigonarca*). The anterior adductor muscle scar is small, situated just below and posterior to the anterior end of the hinge plate; the posterior adductor muscle scar is relatively small, situated on a prominent buttress or flange

below the posterior end of the hinge plate. Like the flange or buttress for the posterior adductor muscle of *Cucullaea*, this flange runs anteriorly toward the umbo. The ornamentation consists of small, closely spaced radial ribs which are somewhat beaded. The most characteristic feature is the large sulcus, which runs from the umbonal region to the ventral border. The sulcus is located along the posterior third of the shell. Posterior to the sulcus is a high ridge, and the posterior end of the shell is flattened and truncated. The sulcus is seen in other prionodonts, but it is rarely so prominent on mature specimens. Young specimens of *Cucullaea* and *Anadara* also show this feature. The sulcus is more prominent on species of *Arca*, where it is usually connected with the byssal notch. It is problematical whether *Pettersia* was attached by a byssus, and it will remain so until a specimen of a right valve is examined.

The largest specimen has a high umbo and a tall ligamental area. The beak is located above and at approximately the center of the ligamental area. Olsson states that the beak is prosogyrate,

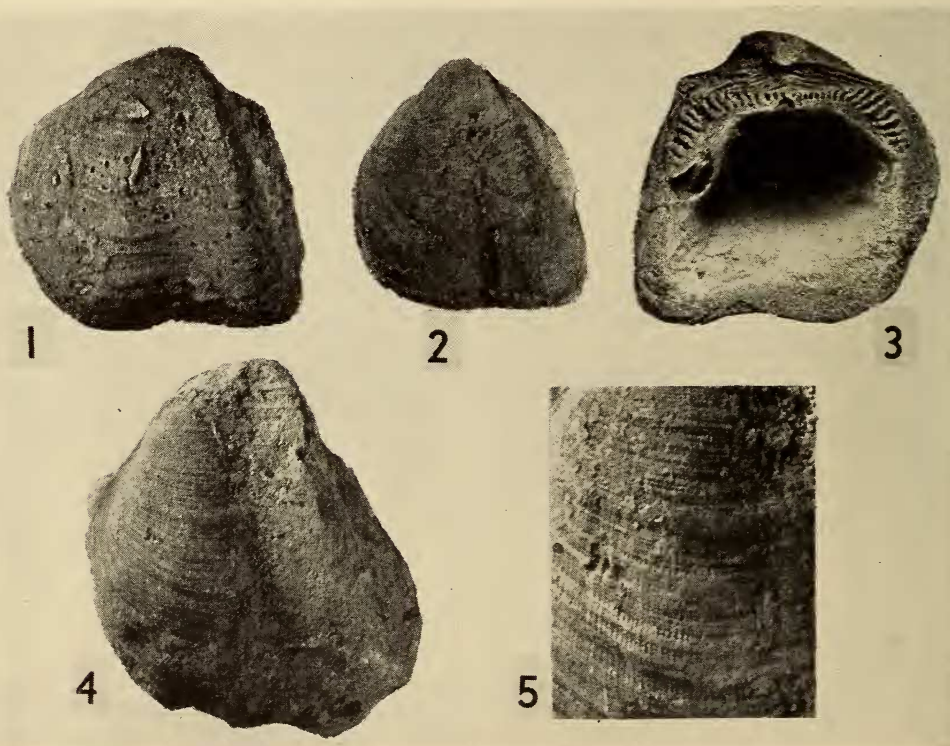
but the material I have examined does not definitely confirm this; it appears to be orthogyrate or, at most, only slightly prosogyrate.

The hinge teeth of *Pettersia* resemble those of *Glycymeris*, *Peruarca*, and *Trigona*. The ligament resembles that of *Glycymeris* and *Trigona*, and the crenulated margin is similar to that of *Glycymeris*. The buttress for the posterior adductor muscle, the ornamentation, the shape of the shell, and the crenulated ventral margin are like those of many of the Cucullaeidae. However, *Pettersia* differs from these genera in having a very deep sulcus along the posterior third of the shell.

Measurements.—As follows (left valves):

	Height	Length	Convexity
Holotype, P. R. I. no. 4862	36.0	32.0	17.0
Hypotype, U. S. N. M. no. 108690	40.4	41.8	19.0
Hypotype, Olsson Collection	53.9	48.2	23.7

Locality data.—The holotype came from Tortuga, Paita region, Peru. The hypotypes (personal communication from Olsson) came from



FIGS. 1-5.—*Pettersia abnormalis*: 1, Exterior view, hypotype, U.S.N.M. no. 108690; 2, exterior view, holotype, P.R.I. no. 4862; 3, interior view, same specimen as in Fig. 1; 4, exterior view, hypotype, A. A. Olsson Collection; 5, exterior view showing ornamentation, $\times 2$, same specimen as in Fig. 4. All figures are of left valves. Figures 1-4 are all $\times 1$. Holotype is from Maestrichtian of Paita region, Peru. Hypotypes are from Maestrichtian of upper part of Magdalena Valley, Colombia.

the Upper Magdalena Valley, west side, south of Girardot, 3,300 meters east of El Valle and 7,500 meters north of San Luis, in a small affluent of the Río Luisa, near a house called El Dinde, Tolima Province, Colombia.

Age.—The holotype came from the *Baculites* zone, Maestrichtian stage, Upper Cretaceous. The hypotypes (personal communication from Olsson) were found in a shell bed in a band of sandy limestone 10 meters below a thin ridge of quartz pebble conglomerate. *Pettersia abnormalis* is associated with Foraminifera of the Maestrichtian stage, including *Siphogenerinoides bramlettei* Cushman and Hedberg.

PALEONTOLOGY.—*A new carpoïd from Oklahoma.* HARRELL L. STRIMPLE, Bartlesville, Okla. (Communicated by Alfred R. Loeblich, Jr.)

The new carpoïd described below was found on a field expedition into the Criner Hills of southern Oklahoma made in the spring of 1950 by Mrs. Melba Strimple, Richard Alexander, and the author. An undescribed species of *Archaeocrinus* and *Hybocrinus crinerensis* Strimple and Watkins have been obtained from the same zone.

Myeinocystites, n. gen.

Theca is compressed, slightly convex in mid-section of one side, and mildly concave on the opposite side. Following the morphological terminology of Bather (1900), the convex side is considered to be the right side and the apposing to be the left side. In the right side, there are 10 plates forming a marginal rim, or frame, and one is smaller than the others, being located in the extended lower right corner of the theca. Three of the marginal plates adjoin the stem. Within this marginal rim there are three large plates, and one small plate to the lower right. A small cluster of plates, resting in a notch between the two uppermost marginal plates, apparently marks an opening into the body cavity, probably a hydropore.

The left side is more complex. Marginal plates of the right side are curved sharply over to form the frame of the left side. Two additional plates are in contact with the stem, and 19 plates are present within the frame. A single small biserial arm rises in the marginal portion of the oral end of the theca and occupies a groove extending downward. To the left of its proximal extremity

ACKNOWLEDGMENTS

I am particularly indebted to Dr. A. A. Olsson, of Coral Gables, Fla., who sent me specimens for study and asked me to describe the new genus. Dr. Katherine V. W. Palmer kindly allowed me to borrow the holotype of *Cardium* (?) *abnormalis* from the collection at the Paleontological Research Institution, Ithaca, N. Y. Wm. T. Allen, of the U. S. National Museum, made the photographs for the paper.

REFERENCE

- OLSSON, A. A. *Contributions to the paleontology of northern Peru: Part VII, The Cretaceous of the Paita region.* Bull. Amer. Pal. **28** (111): 146 pp., 17 pls. 1944.

is found a long tubelike structure which appears to be an opening into the body cavity, though the function is a matter of conjecture. Immediately above the base of the arm there is a small cluster of plates, previously noted on the right side. A canal originates to the right of the arm base and follows the marginal rim past another opening to the right (probably the anus) and appears to terminate on a convex plate just below mid-height of the theca. The proximal portion of the above-mentioned convex plate terminates abruptly, forming a sharp notchlike structure which might represent another opening into the body cavity (? a primitive pore-rhomb). The opening which lies to the right of the arm is covered by seven minute plates which converge toward the center.

The stem is wide, composed of thin columnals which do not form complete circlets owing to interruption by laterally directed sutures on the left side.

Surface ornamentation consists of heavy granules, or minute pustules, which do not form any definite pattern. They are more pronounced on the right side and are entirely absent on the arm, covering plates of the body openings, and in the canal of the left side.

Genotype species.—*Myeinocystites natus*, n. sp.

Occurrence.—Bromide formation, Ordovician; North America.

Remarks.—The presence of a canal is not without precedence among the Anomalocystidae. In *Trochocystites* Barrande (1859) such a canal is reported running round the thecal cavity on the inside of the marginals. Three openings are pres-